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Challenges

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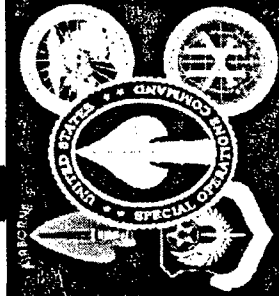
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ADP010797 thru ADP010815

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# PROGRAMS AND TECHNOLOGIES FOR FUTURE CHALLENGES

SPECIAL OPERATIONS  
ACQUISITION EXECUTIVE

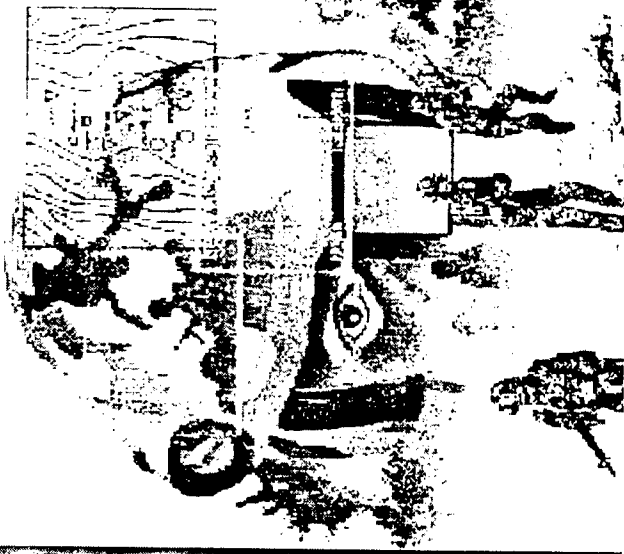
MR. HARRY SCHULTE

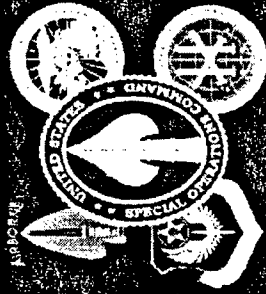
13 FEBRUARY 2001



# TECHNOLOGY AREAS

- Air, Land, Sea, Space Systems
- Biomedical
- Chem/Bio Defense and Nuclear
- Computing/Modelling & Simulation
- Command, Control, and Communications
- Human Systems
- Information Operations





# TECHNOLOGY AREAS

- Materials/Processes
- Weapons/Munitions/Directed Energy
- Sensors, Electronics, Battlespace Environment
- Power Sources





# TECHNOLOGY AREA

## Air, Land, Sea, Space Systems



### Capabilities/Areas of Concern:

- Conduct undetectable ground, sea, air, and space mobility operations
- Longer range/global response projection and protection from threats
- Interface and operate within the space surveillance network including UAV networks

### Projects:

- Reduced Signature
- Active Noise Cancellation
- Millimeter Wave Electronic Technology
- Improved Special Operations Craft





# TECHNOLOGY AREA

## Biomedical

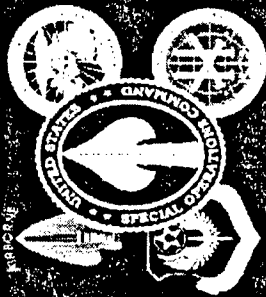


### Capabilities/Areas of Concern:

- Hemorrhage control techniques
- Resuscitation fluids
- Card diagnostics
- Combat casualty care devices
- Medical planning tools
- Electronic med ref system

### Projects:

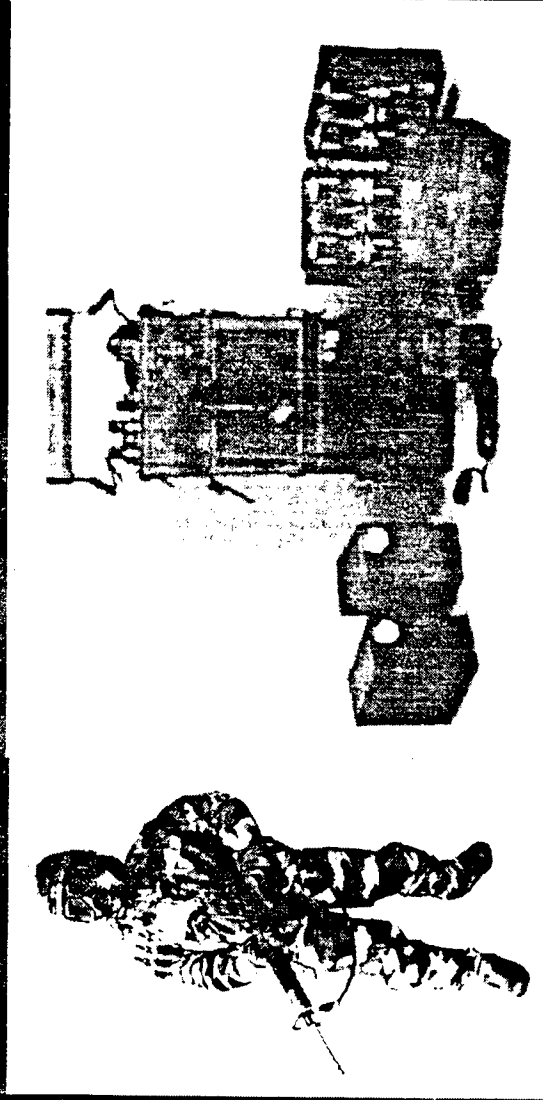
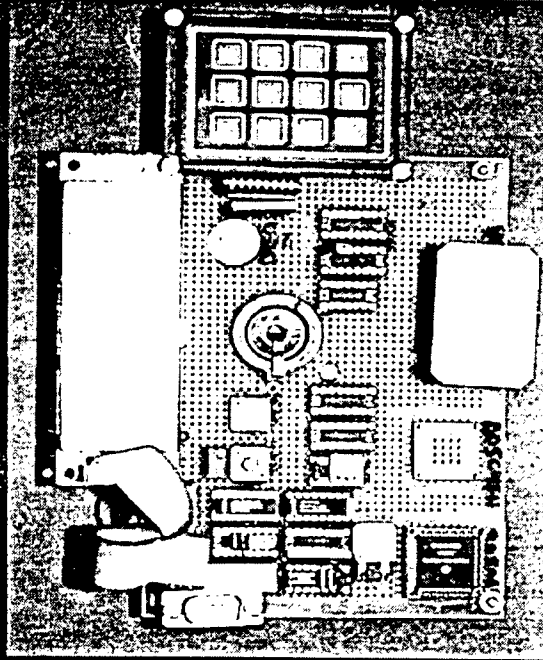
- Injectable Hemostatic Drugs
- Casualty Evacuation
- Casualty Retrieval Device
- Enhancement of SO Training using Human Simulators
- Operational Medicine CD ROM



# TECHNOLOGY AREA

## Chemical, Biological Defense and

### Nuclear

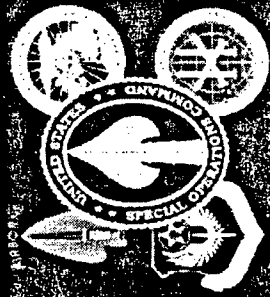


#### Capabilities/Areas of Concern:

- Detect, discriminate, identify NBC material at standoff ranges
- Detect WMD-specific means of delivery and infrastructure
- Destroy and/or neutralize WMD
- Handle, containerize, and transport WMD and NBC material

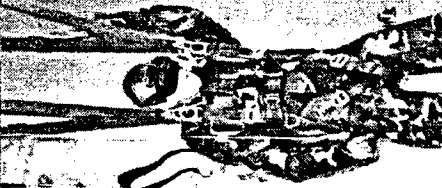
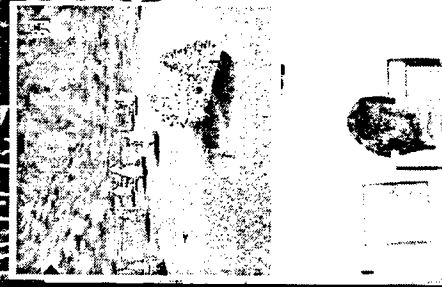
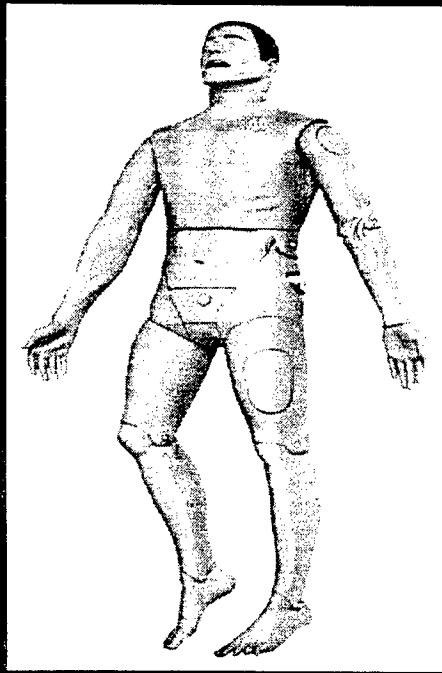
#### Projects:

- Hand-Portable Waterless Decontamination System
- Advanced Lightweight NBC Protective Clothing
- Advanced Chemical Alarm



# TECHNOLOGY AREA

## Computing/Modeling & Simulation



### Capabilities/Areas of Concern:

- Systems will need to accommodate excursions for simulation, rehearsal, and training
- Provide user-friendly portable, medical reference software and databases

• SIE-supporting technologies

### Projects:

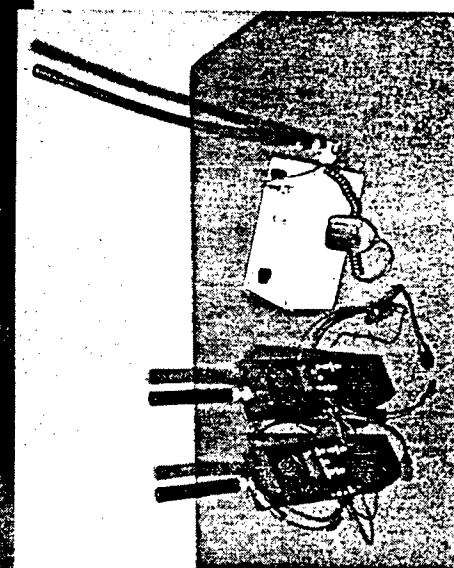
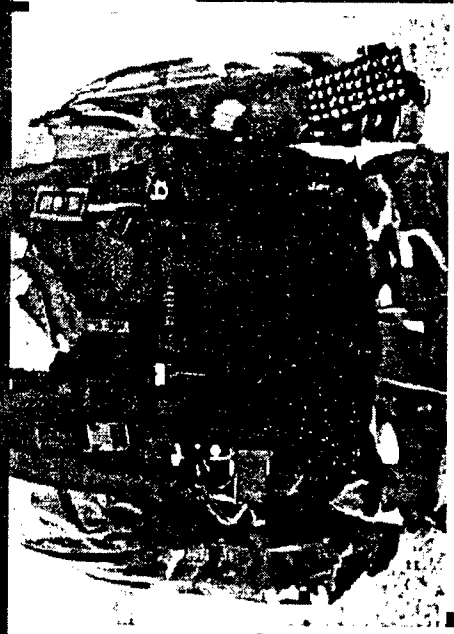
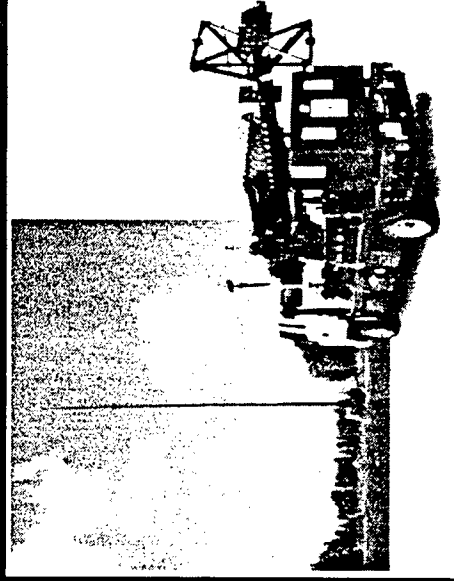
- Human Patient Simulators
- Tactical Simulator for SOF
- Advanced SO Planning & Rehearsal Parachute Simulation
- Cognitive Learning Strategies for SOF





# TECHNOLOGY AREA

## Command, Control, and Communications

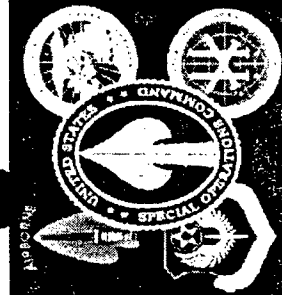


### Capabilities/Areas of Concern:

- Uninterrupted information exchange
- Embedded COMSEC and sensor integration
- Automated comms & mission mgt
- Share large amounts of data in real-time

### Projects:

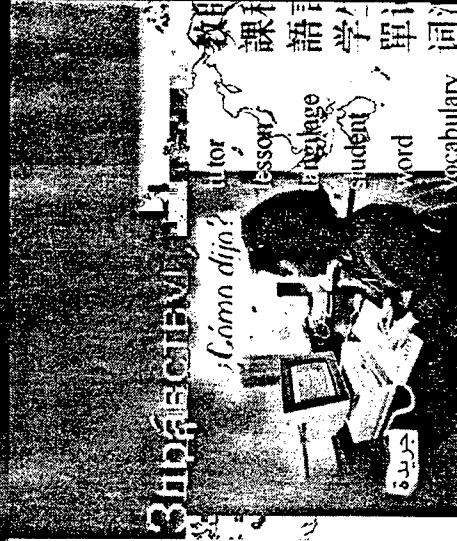
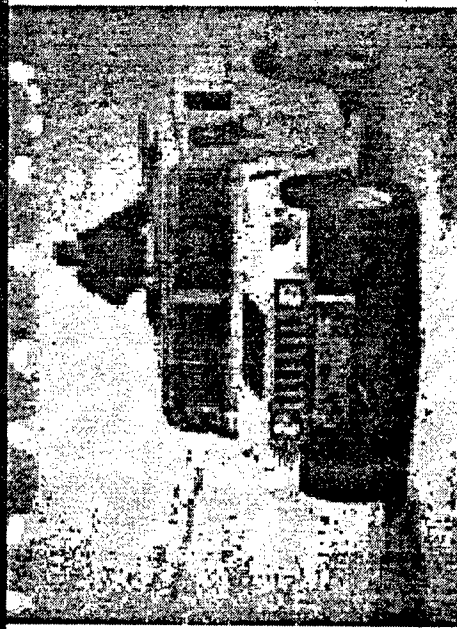
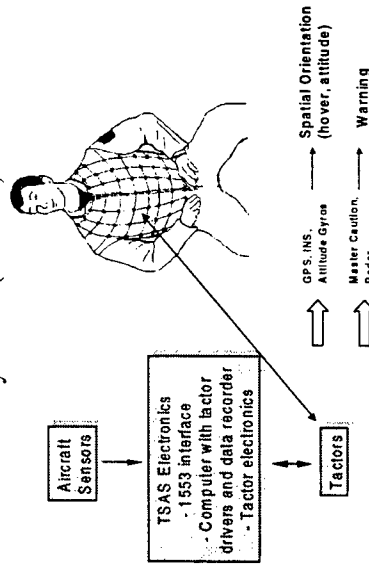
- Antenna Enhancements
- Tactical Personal Computer
- LPI/LPD Imagery Link
- PSYOP Broadcast System
- Undersea Communications Node



# TECHNOLOGY AREA

## Human Systems

Tactile Situation Awareness System (TSAS)



### Capabilities/Areas of Concern:

- Improve survivability of personnel conducting special operations
- Enhance performance, sustainment, and situational awareness

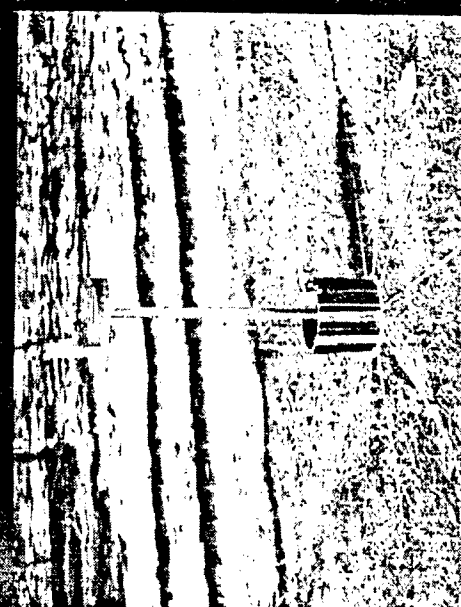
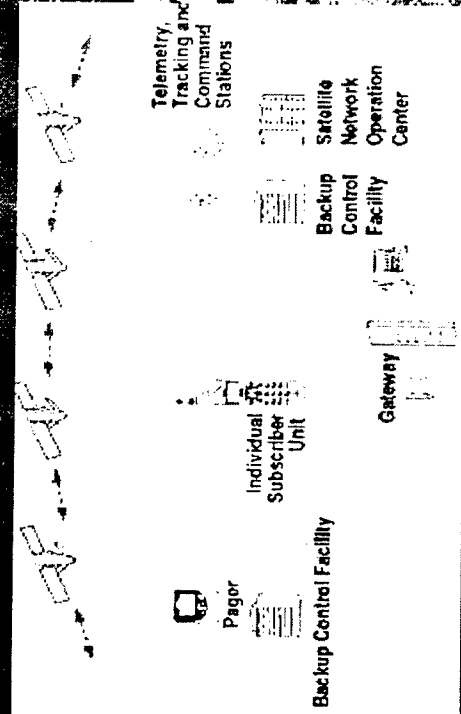
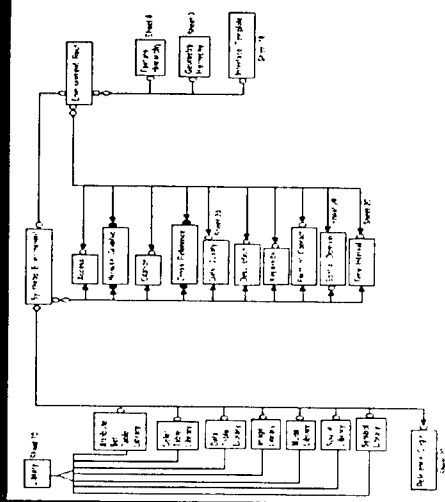
### Projects:

- Tactile Situation Awareness System
- NVEO Enhancements
- Advanced Technology Exposure Suit
- SOF Tactical Decision Aids



# TECHNOLOGY AREA

## Information Operations

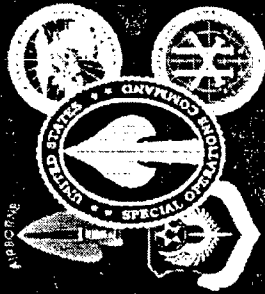


### Capabilities/Areas of Concern:

- Reduce adversary's ability to use information and influence situations to support mission
- Ensure all measures of defense to protect systems
- Network PSYOP systems
- SIE-supporting technologies

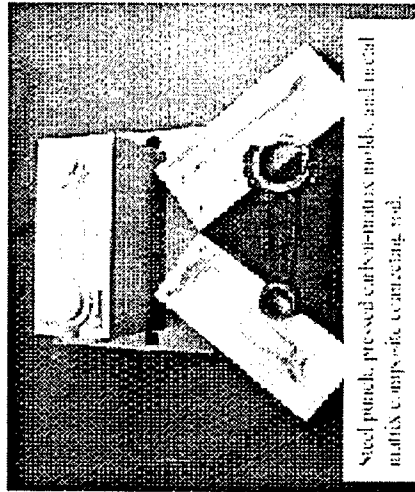
### Projects:

- Database Conversion Software
- Emergency Locator Transmitter Devices
- Remote Miniature Weather Station
- Burst Communications & LPD Antenna

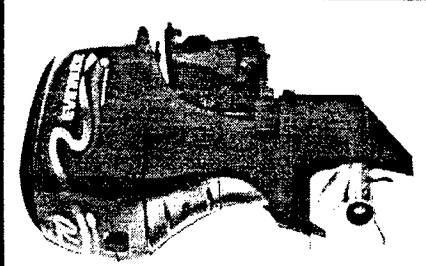


# TECHNOLOGY AREA

## Materials/Processes



Steel punch presses carbon-matrix mold, and metal matrix compo-ite, containing void.



### Capabilities/Areas of Concern:

- Take advantage of advanced materials and processes to produce lighter, faster, and stronger systems while reducing the acoustic, magnetic, and visual image of the system

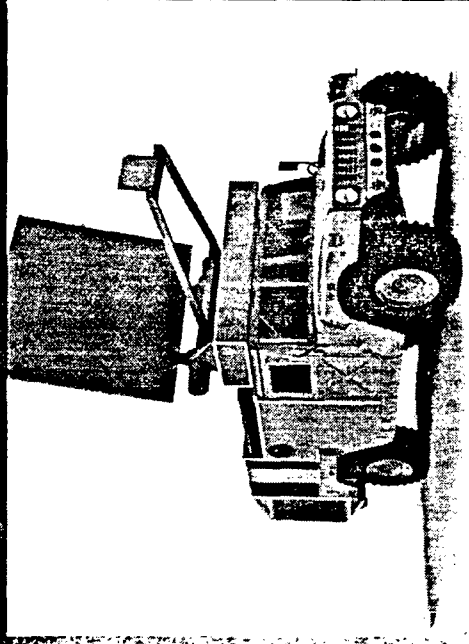
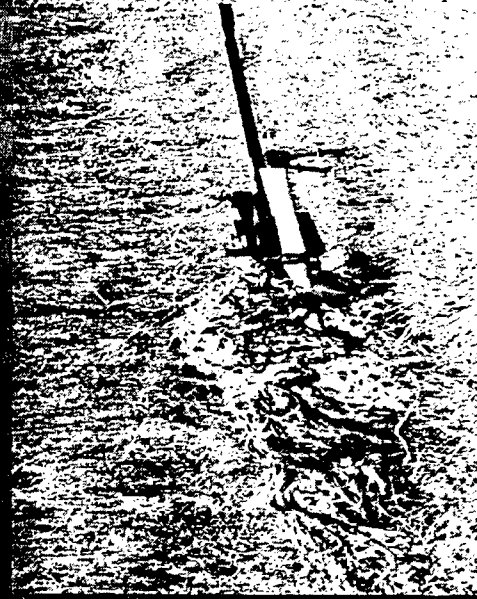
### Projects:

- Maritime Ballistic Protection
- Advanced Propulsion System
- Emerging Outboard Engine Technology
- Signature Evaluation of Composite Engine



# TECHNOLOGY AREA

## Weapons, Munitions, Directed Energy



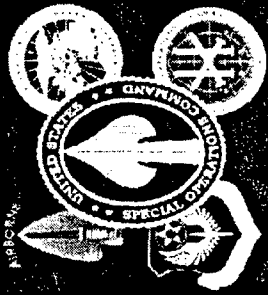
### Capabilities/Areas of Concern:

- Multirole/multipurpose weapons with target discrimination
- Ability to produce a broader range of effects, from non-lethal to hard target kill
- Precision guidance and non-line-of-sight capability

### Projects:

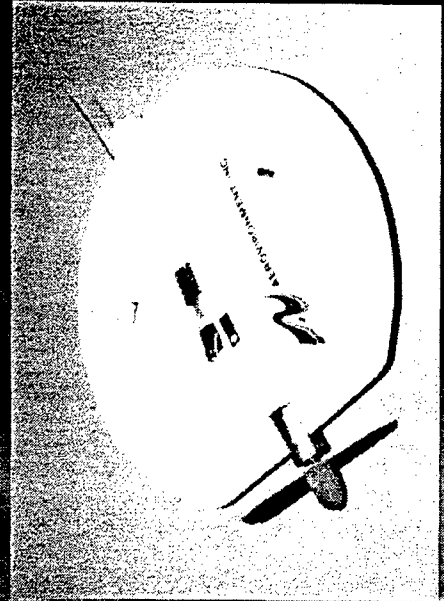
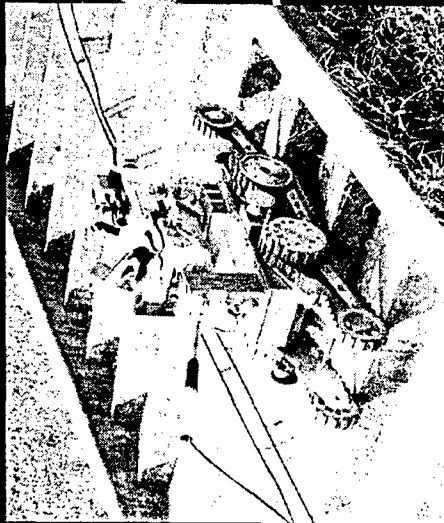
- AC-130 105mm Smart Round
- Anti-Material Payload Rifle
- Active Denial Technology, and HPM
- Remote Sighting System for Weapons
- Shoulder Fire Smart Round





# TECHNOLOGY AREA

## Sensors, Electronics, Battlespace Environment



### Capabilities/Areas of Concern:

- Significantly enhance human sensory functions
- See through walls, foliage, soil, and severe weather
- Near-total situational awareness
- Detecting, classifying, locating, and cueing other systems

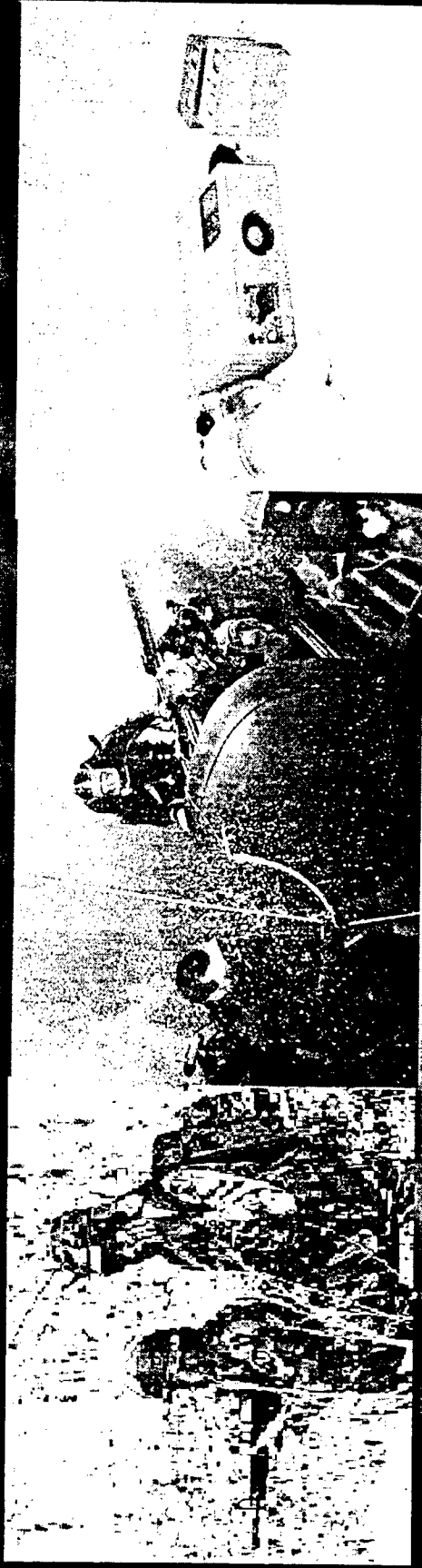
### Projects:

- Minaturized Robotics
- Remotely Monitored Battlefield Sensor Technology
- Micro Unmanned Vehicles
- Radar Sensor for Wide Area Surv



# TECHNOLOGY AREA

## Power Sources



### Capabilities/Areas of Concern:

- Power sources and power management for man-portable systems in remote operations
- Reduce size, number, and weight of power sources

### Projects:

- State of Battery Health Test Set for SOF Equipment Batteries
- Battery Recharging System
- Power Source for ASDS/SDV



# FUTURE CHALLENGES

- Unconventional Threats and Missions
- Special Operations Forces More Involved Day by Day Executing NMS
- Smaller, Lighter, Better—Not a Slogan
- Increased Dependence on Industry
  - Cost Constrained Environment
  - Utilization of COTS Components
  - Key Technologies Developed by Industry
  - Performance is the Warfighter's Concern

